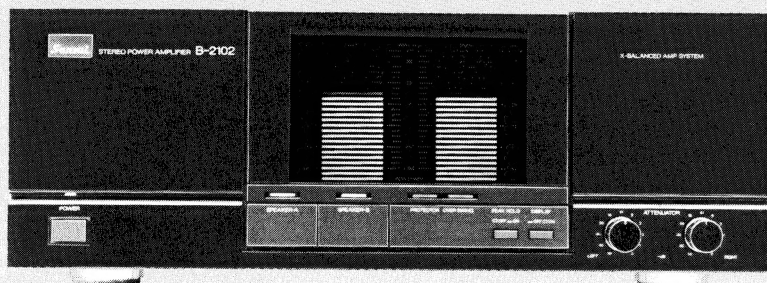


# SERVICE MANUAL

## STEREO POWER AMPLIFIER

# SANSUI B-2102



### CAUTION

1. Parts identified by the  $\triangle$  symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

### •SPECIFICATIONS

#### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.003% total harmonic distortion.

200 watts per channel into 8 ohms

**Load impedance**..... 4 to 16 ohms

#### Total harmonic distortion

..... less than 0.003% at or below rated min. RMS power output

#### Intermodulation distortion

(60 Hz: 7 kHz = 4:1, SMPTE method)

..... less than 0.003% at rated power output

#### Frequency response (at 1 watt)

..... DC to 300,000 Hz, +0 dB, -3.0 dB

#### Input sensitivity and impedance (at 1 kHz)

..... 1 V/5.6 kohms

#### Signal to noise ratio (short-circuit, A-network)

..... 115 dB

#### Power requirements

Power voltage..... 120/220/240V (50/60 Hz)

For U.S.A. & Canada

..... 120V (60 Hz)

Power consumption.... 650 watts 750 VA Rated

950 watts Maximum

**Dimensions**..... 430 mm (16-15/16") W

160 mm (6-5/16") H

412 mm (16-1/4") D

**Weight**..... 17.7 kg (39.0 lbs) net

19.5 kg (43.0 lbs) packed

\* Design and specifications subject to changes without notice for improvements.

\* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.



SANSUI ELECTRIC CO., LTD.

## CAUTION

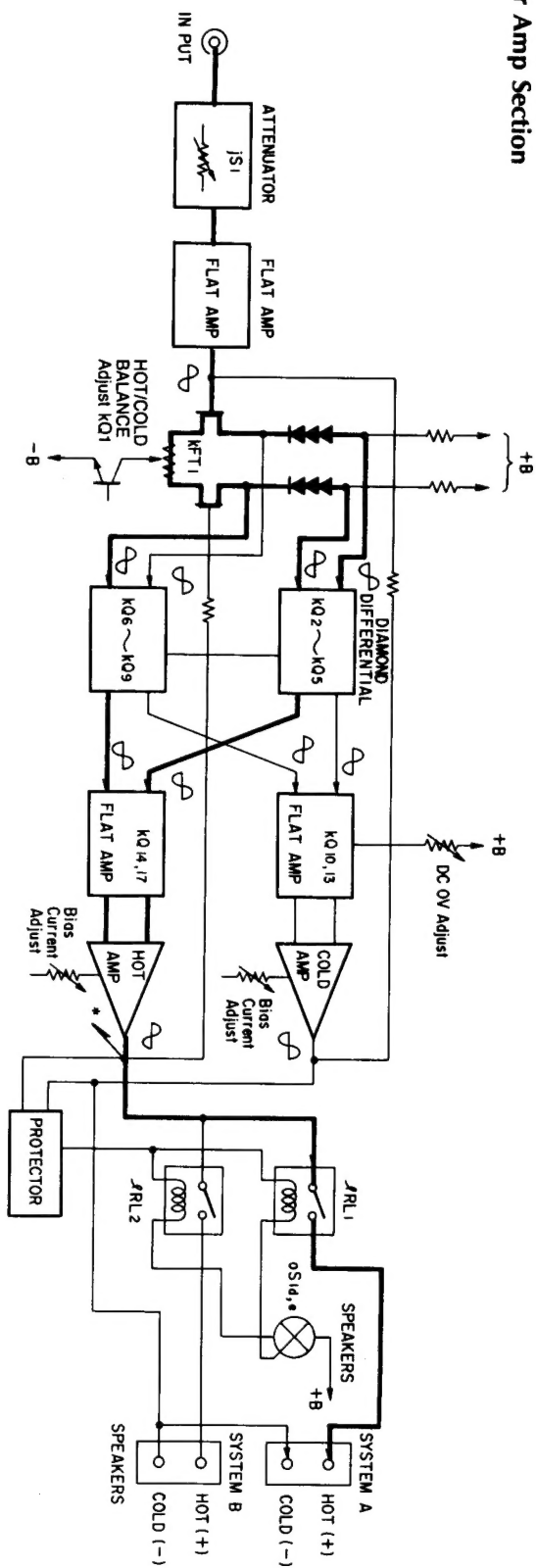
1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SEV, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.  
UL..... Manufactured for U.S.A market.  
(Underwriters Laboratories approved model.)  
CSA ..... Manufactured for Canadian market.  
SA..... Manufactured for South African market.  
BS, UK ..... Manufactured for United Kingdom market.  
EU ..... Manufactured for European market.  
AS..... Manufactured for Australian market.  
SEV ..... Manufactured for Swiss market.  
XX..... Standard Version with Inner Voltage Selector.  
<EXPORT>  
XX-V ..... Standard Version with Outer Voltage Selector.  
<EXPORT(V)>  
NON MARK ..... Common Parts.
2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
4. Abbreviations in this service manual are as follows.

## • Abbreviations List

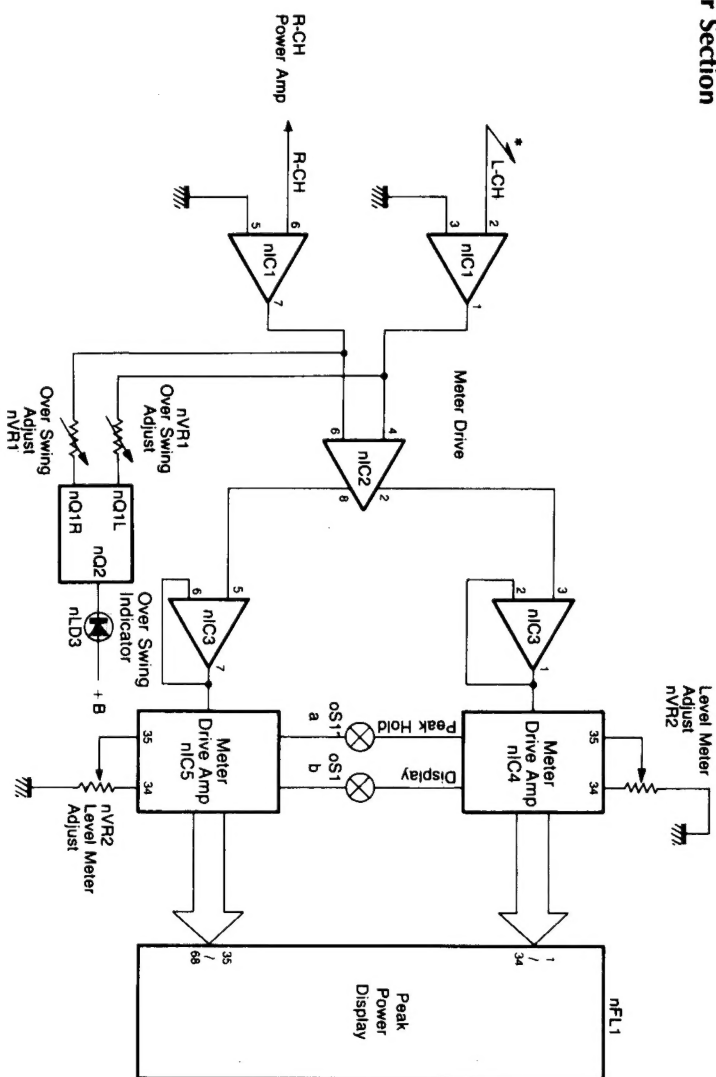
C.R. : Carbon Resistor	E.B.L. : Low Leak Bi-Polar
S.R. : Solid Resistor	Electrolytic Capacitor
Ce.R. : Cement Resistor	Ta.C. : Tantalum Capacitor
M.R. : Metal Film Resistor	F.C. : Film Capacitor
F.R. : Fusing Resistor	M.P. : Metalized Paper Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
A.R. : Array Resistor	G.C. : Gimmic Capacitor
C.C. : Ceramic Capacitor	A.C. : Array Capacitor
C.T. : Ceramic Capacitor,	V.R. : Variable Resistor
Temperature Compensation	S.V.R. : Semi Variable Resistor
E.C. : Electrolytic Capacitor	SW. : Switch
E.L. : Low Leak Electrolytic	Chip R. : Chip Resistor
Capacitor	Chip C. : Chip Capacitor
E.B. : Bi-Polar Electrolytic	
Capacitor	

## 1. BLOCK DIAGRAM

### •Power Amp Section



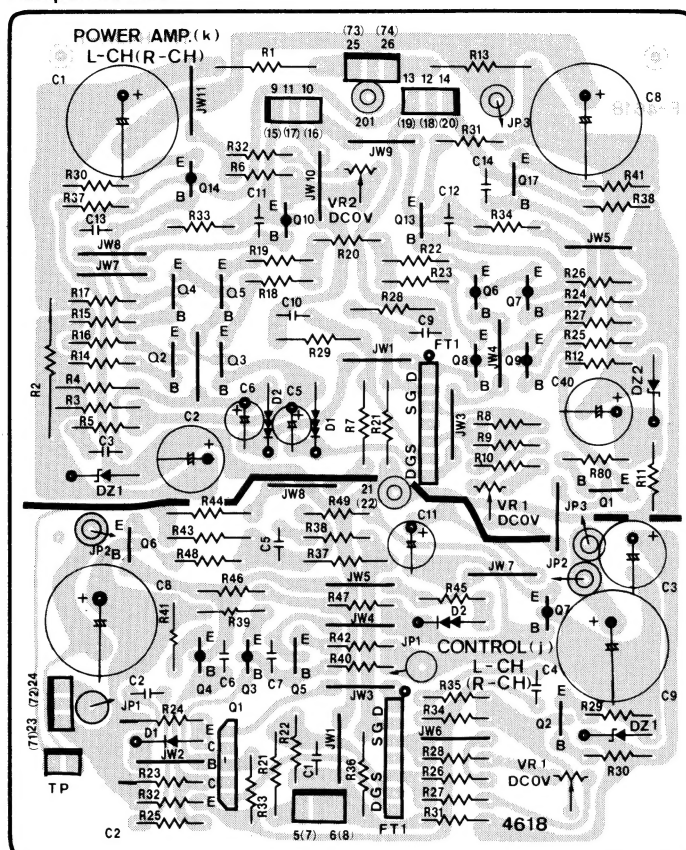
### •Peak Power Meter Section



## 2. PARTS LOCATION ON BOARD

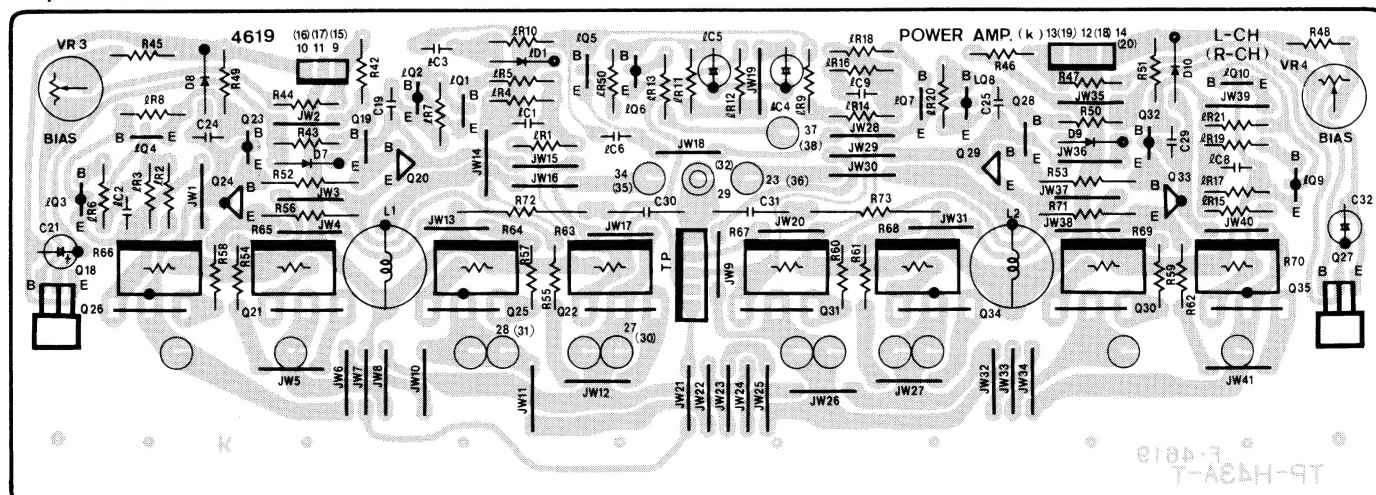
### 2-1. F-4618 Drive Amp Board

Component Side



### 2-2. F-4619 Power Amp Board

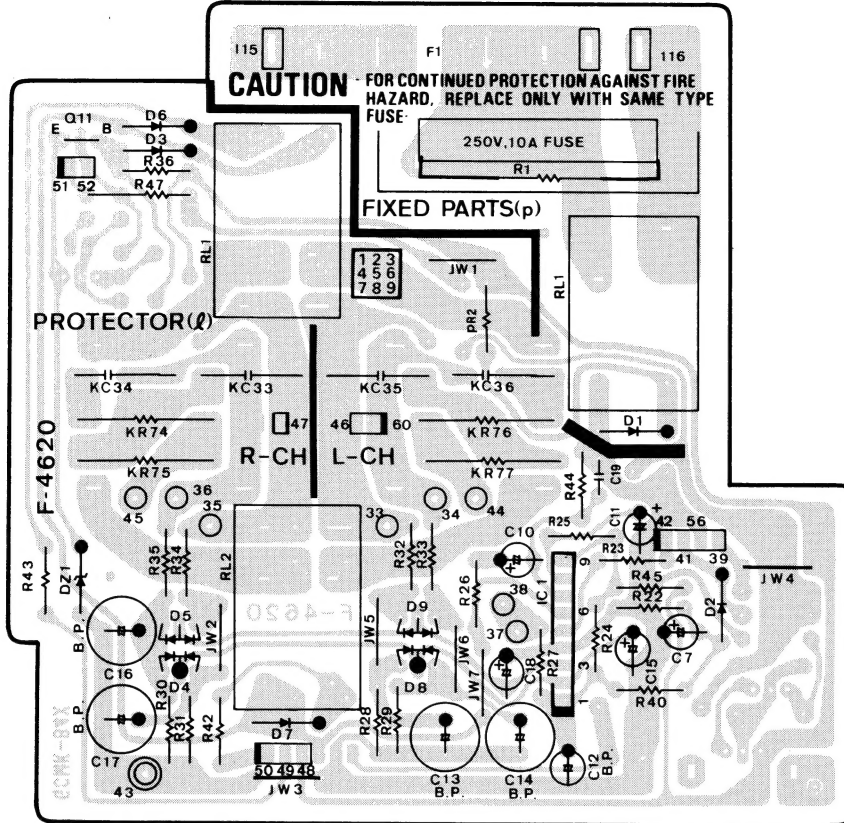
Component Side





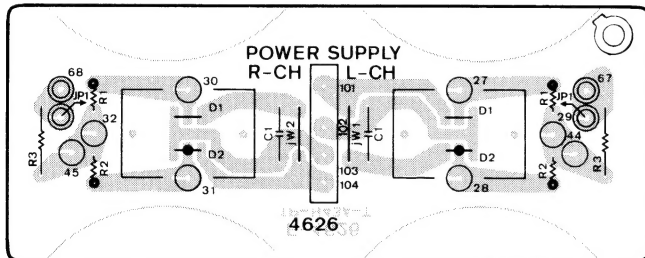
### 2-3. F-4620 Protector Board

Component Side



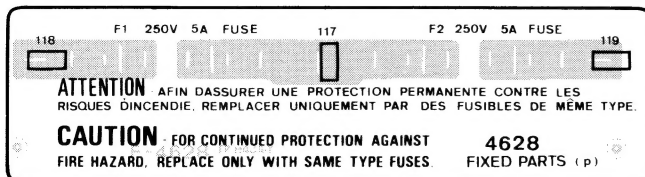
### 2-4. F-4626 Power Supply Board

Component Side



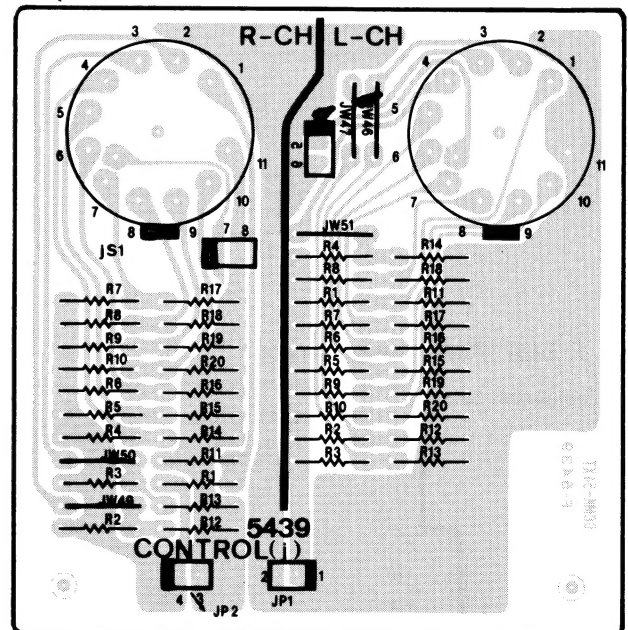
### 2-5. F-4628 AC Fuse Board

Component Side



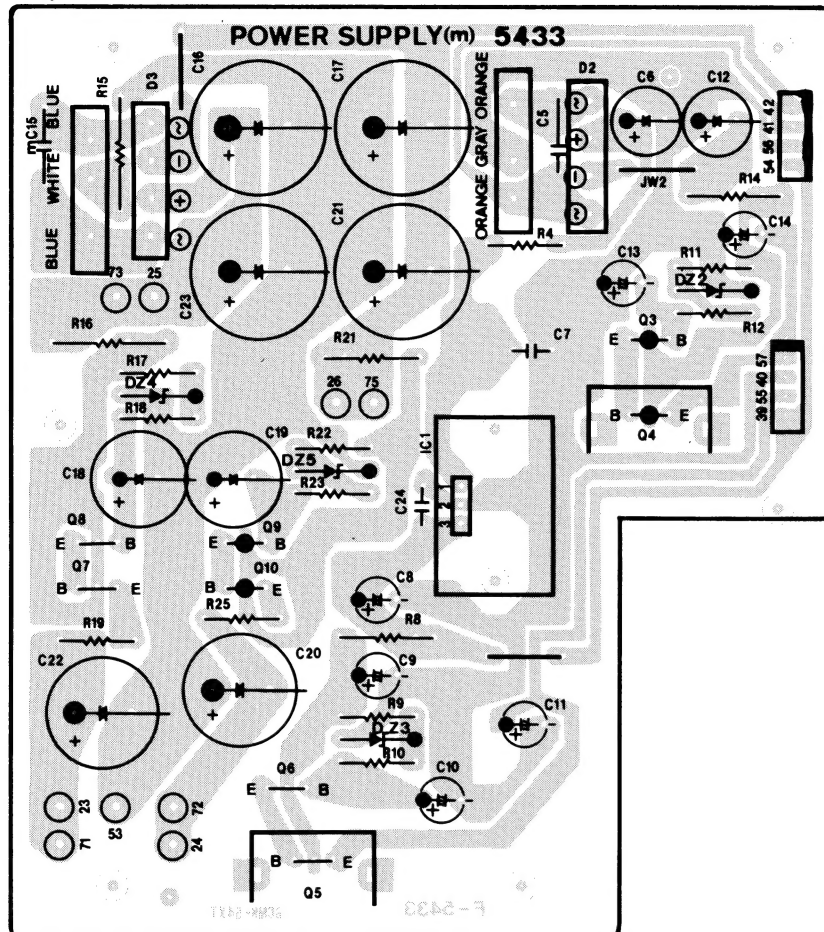
### 2-6. F-5439 Control Board

Component Side



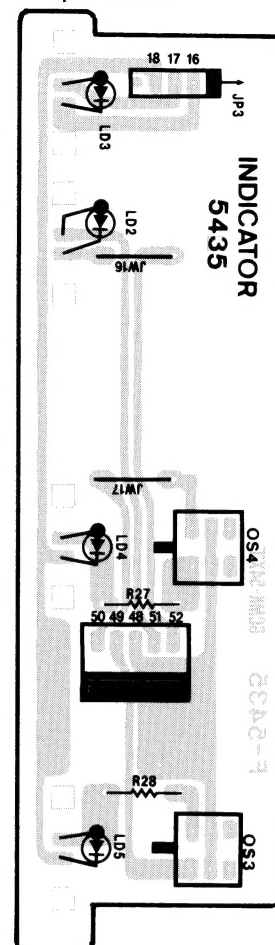
## 2-7. F-5433 Power Supply Board

Component Side



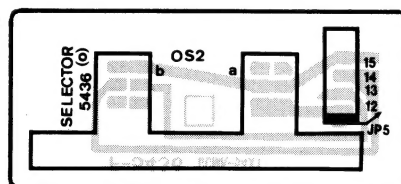
## 2-8. F-5435 Speaker Switch Board

Component Side



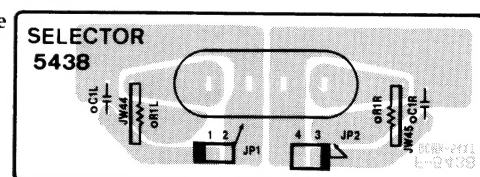
## 2-9. F-5436 Display Switch Board

Component Side



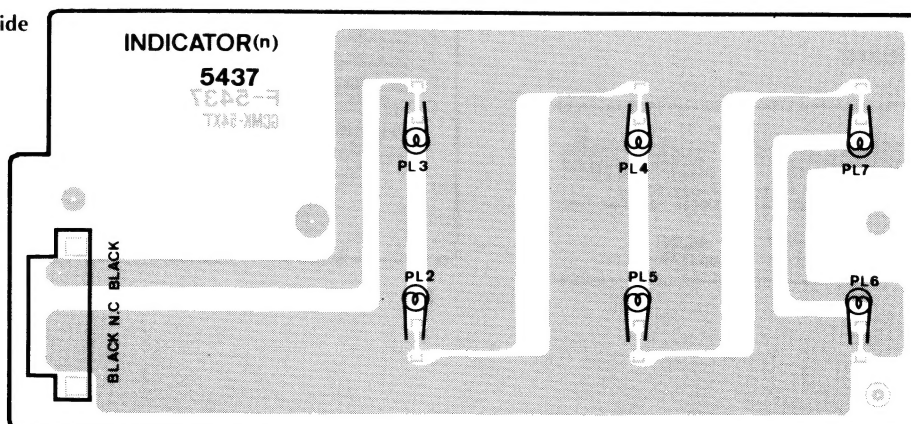
## 2-10. F-5438 Input Terminal Board

Component Side



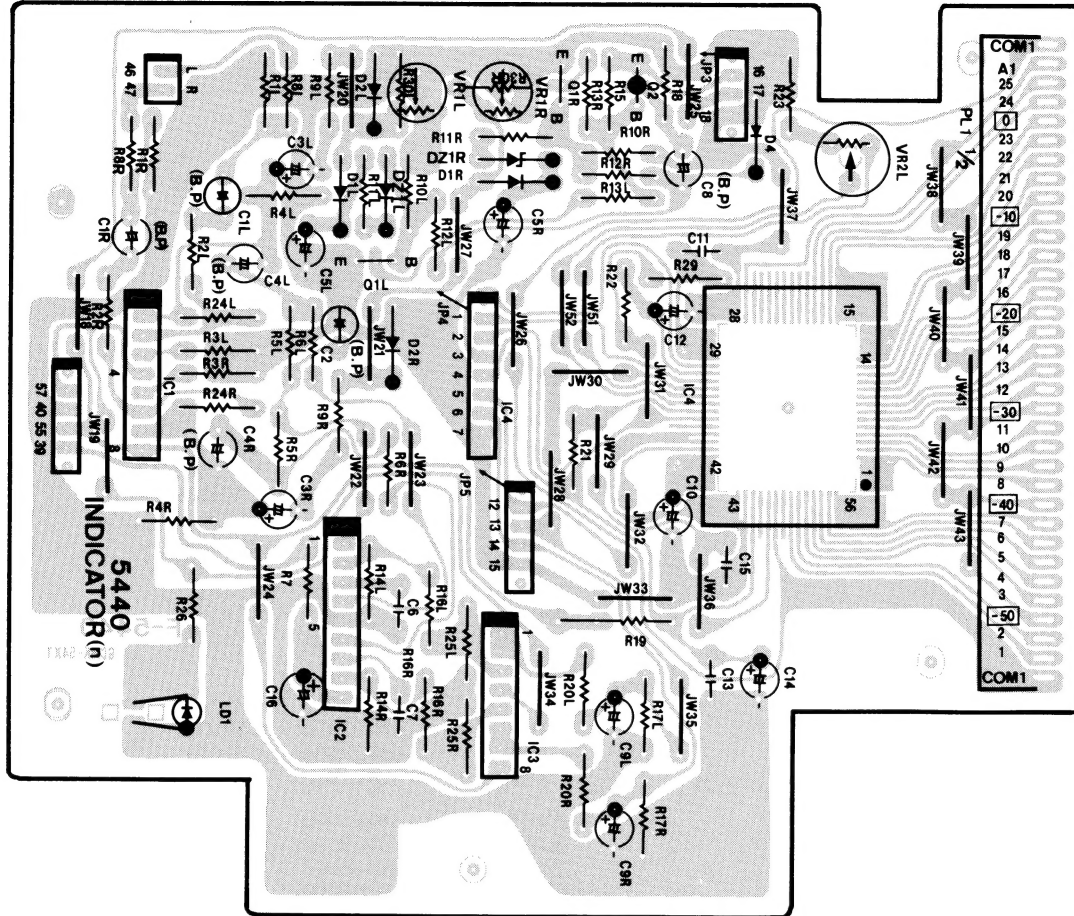
## 2-11. F-5437 Pilot Lamp Board

Component Side



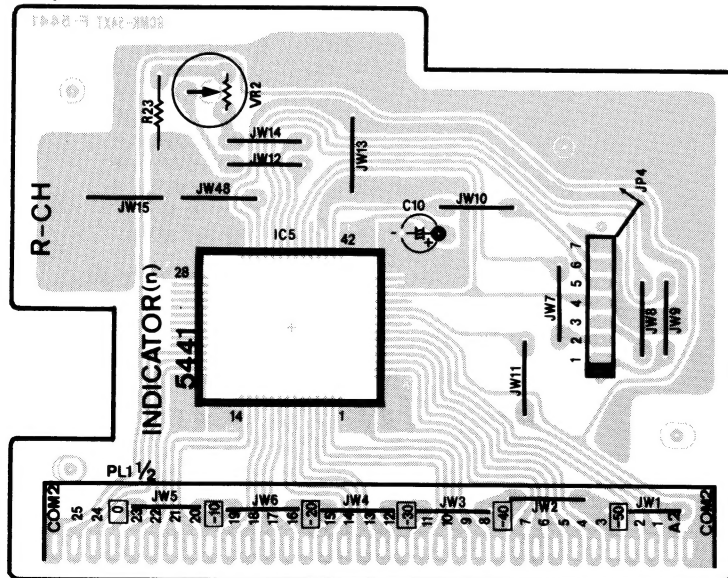
## 2-12. F-5440 L-ch Indicator Board

Component Side



## 2-13. F-5441 R-ch Indicator Board

Component Side



### 3. PARTS LIST OF BOARD

#### 3-1. F-4618 Drive Amp Board (Stock No. 00985601)

Parts No.	Stock No.	Description
•Transistor		
jQ1	03068801	2SC2291
jQ2	46581701	2SC1845
jQ3	46581601	2SA992
jQ4	46581601	2SA992
jQ5	46581701	2SC1845
jQ6	46728301	2SC2705
jQ7	46728201	2SA1145
•FET		
jFT1	48583300 or 48583301	$\mu$ PA68HA-L $\mu$ PA68HA-M
•Diode		
jD1	03117600 or 46086000	1S2473T77 1S1588TP-3
jD2	03401500	Varistor MV12
•Zener Diode		
jDZ1	46111800	05Z6.2-Y
jR43	46004500	680 $\Omega$ 1/2W C.R.
jR44	46002700	120 $\Omega$ 1/2W C.R.
$\Delta$ jR48	00134100	33 $\Omega$ 1/2W N.I.R.
$\Delta$ jR49	00134100	33 $\Omega$ 1/2W N.I.R.
jC2	46661700	1000pF 100V F.C.
jC4	46661700	1000pF 100V F.C.
jVR1	10335700	100 $\Omega$ (B) S.V.R., Center DC 0V
•Transistor		
kQ1	46581701	2SC1845
kQ2	46581701	2SC1845
kQ3	46581701	2SC1845
kQ4	46581701	2SC1845
kQ5	46581701	2SC1845
kQ6	46581601	2SA992
kQ7	46581601	2SA992
kQ8	46581601	2SA992
kQ9	46581601	2SA992
kQ10	46728201	2SA1145
kQ13	46728301	2SC2705
kQ14	46728201	2SA1145
kQ17	46728301	2SC2705
•FET		
kFT1	48583300 or 48583301	$\mu$ PA68HA-L $\mu$ PA68HA-M
kD1	03401700	Varistor MV103
kD2	03401700	Varistor MV103
•Zener Diode		
kDZ1	03171900	RD27F
kDZ2	46114800	05Z16-Y
$\Delta$ kR1	00134100	33 $\Omega$ 1/2W N.I.R.
$\Delta$ kR2	00191400	680 $\Omega$ 2W N.I.R.
$\Delta$ kR6	00133600	270k $\Omega$ 1/2W N.I.R.
kR7	46006300	3.9k $\Omega$ 1/2W C.R.
$\Delta$ kR13	00134100	33 $\Omega$ 1/2W N.I.R.
kR21	46006500	4.7k $\Omega$ 1/2W C.R.
$\Delta$ kR30	00131500	120 $\Omega$ 1/2W N.I.R.
$\Delta$ kR31	00131500	120 $\Omega$ 1/2W N.I.R.
$\Delta$ kR32	00131500	120 $\Omega$ 1/2W N.I.R.
$\Delta$ kR41	00131500	120 $\Omega$ 1/2W N.I.R.
kC3	46662100	1500pF 100V F.C.
kVR1	10335700	100 $\Omega$ (B) S.V.R., Hot/Cold Balance
kVR2	10336100	470 $\Omega$ (B) S.V.R., DC 0V

#### 3-2. F-4619 Power Amp Board (Stock No. 00985701 = XX-V,EU,UK,SEV/Stock No. 00985703 = CSA)

Parts No.	Stock No.	Description
•Transistor		
$\Delta$ kQ18	03067401	2SC1845
kQ19	46728301	2SC2705
kQ20	46728901	2SC3298
	or 48158701	2SC2591
$\Delta$ kQ21	46729901	2SC3519
$\Delta$ kQ22	46729901	2SC3519
kQ23	46728201	2SA1145
kQ24	46728801	2SA1306
	or 48158601	2SA1111
$\Delta$ kQ25	46729801	2SA1386
$\Delta$ kQ26	46729801	2SA1386
$\Delta$ kQ27	03067401	2SC1845
kQ28	46729901	2SC3519
kQ29	46728901	2SC3298
	or 48158701	2SC2591
$\Delta$ kQ30	46729901	2SC3519
$\Delta$ kQ31	46729901	2SC3519
kQ32	46728201	2SA1145
$\Delta$ kQ33	46728801	2SA1306
$\Delta$	or 48158601	2SA1111
$\Delta$ kQ34	46729801	2SA1386
$\Delta$ kQ35	46729801	2SA1386
•Diode		
kD7	46727900	1S2091
kD8	46727900	1S2091
kD9	46727900	1S2091
kD10	46727900	1S2091
$\Delta$ kR43	46229000	100 $\Omega$ 1/2W N.I.R. <CSA only>
$\Delta$ kR49	46229000	100 $\Omega$ 1/2W N.I.R. <CSA only>
$\Delta$ kR52	00136000	560 $\Omega$ 1/2W N.I.R.
$\Delta$ kR54	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR55	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR56	00131500	120 $\Omega$ 1/2W N.I.R.
$\Delta$ kR57	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR58	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR59	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR60	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR61	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR62	00135800	4.7 $\Omega$ 1/2W N.I.R.
$\Delta$ kR63	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR64	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR65	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR66	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR67	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR68	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR69	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR70	46542800	0.22 $\Omega$ 5W Ce.R.
$\Delta$ kR72	00185500	10 $\Omega$ 2W N.I.R.
$\Delta$ kR73	00185500	10 $\Omega$ 2W N.I.R.
kC30	00411600	47000 $\mu$ F 400V P.C.
kC31	00411600	47000 $\mu$ F 400V P.C.
kL1	46851900	Inductor 0.8 $\mu$ H
kL2	46851900	Inductor 0.8 $\mu$ H
kVR3	10342100	1k $\Omega$ (B) S.V.R., Bias Adjust
kVR4	10342100	1k $\Omega$ (B) S.V.R., Bias Adjust
•Transistor		
IQ1	46367101	2SC2603
IQ2	46367001	2SA1115
IQ3	46367001	2SA1115
IQ4	46367101	2SC2603
IQ5	46367101	2SC2603
IQ6	46367001	2SA1115
IQ7	46367101	2SC2603

to be continued ►



## &lt;F-4619&gt;

Parts No.	Stock No.	Description
IQ8	46367001	2SA1115
IQ9	46367001	2SA1115
IQ10	46367101	2SC2603
•Diode		
ID1	03117600 or 46086000	1S2473T77 1S1588TP-3
IC1	46655600	1000pF 100V F.C.
IC2	46655600	1000pF 100V F.C.
IC3	46654800	470pF 100V F.C.
IC6	46283300	0.022μF 50V F.C.
IC8	46655600	1000pF 100V F.C.
IC9	46655600	1000pF 100V F.C.

## 3-3. F-4620 Protector Board (Stock No. 00986101)

Parts No.	Stock No.	Description
ΔkR74	00185500	10Ω 2W N.I.R.
ΔkR75	00185500	10Ω 2W N.I.R.
ΔkR76	00185500	10Ω 2W N.I.R.
ΔkR77	00185500	10Ω 2W N.I.R.
kC33	00411600	47000μF 400V P.C.
kC34	00411600	47000μF 400V P.C.
kC35	00411600	47000μF 400V P.C.
kC36	00411600	47000μF 400V P.C.
•Transistor		
IQ11	07194801	2SC1815
•IC		
IIC1	46207600	TA7317P
•Diode		
ID2	03117700	10E-2
ID3	03111800 or 07176400	1S1588 1S2473HS
ID4	46463700	MC911
ID5	46463900	MC921 (Chip)
ID6	03117700	10E-2
ID7	03117700	10E-2
ID8	46463700	MC911
ID9	46463900	MC921 (Chip)
•Zener Diode		
IDZ1	46101600 or 46101700	05Z6.2-Y 05Z6.2-Z
ΔIR42	00130800	10Ω 1/2W N.I.R.
ΔIR43	00130800	10Ω 1/2W N.I.R.
ΔIR47	46250800	1.8kΩ 1W N.I.R.
IC12	07129900	1μF 50V E.B.
IC13	08460800	100μF 10V E.B.
IC14	08460800	100μF 10V E.B.
IC16	08460800	100μF 10V E.B.
IC17	08460800	100μF 10V E.B.
IRL1	46446400	Relay, JC24V
IRL2	46446400	Relay, JC24V
oZ2	46739500	8P Terminal, Speaker
•Diode		
pD1	03117700	10E-2
pR1	46739900	3.9Ω 10W Ce.R.
pRL1	46222200	Relay, 1M G4W

## 3-4. F-4626 Power Supply Board

Parts No.	Stock No.	Description
•Diode		
ΔmD1	46731500	CTP-21S
ΔmD2	46731400	CTP-21R
ΔmR1	00150600	6.8kΩ 2W N.I.R.
ΔmR2	00150600	6.8kΩ 2W N.I.R.
mC1	48527800	0.01μF 630V F.C.
mC2	48498300	8200μF 95V E.C.
mC3	48498300	8200μF 95V E.C.
mC4	46222800	0.22μF 100V F.C.

## 3-5. F-4628 AC Fuse Board

Parts No.	Stock No.	Description
ΔpF1	48721800	Fuse 5.0A <XX-V>
ΔpF2	48721800	Fuse 5.0A <XX-V>

## 3-6. F-5439 Control Board

Parts No.	Stock No.	Description
jS1	48498500	Rotary SW., ATTENUATOR

## 3-7. F-5433 Power Supply Board (Stock No. 00993801)

Parts No.	Stock No.	Description
•Transistor		
mQ3	07299601 or 46078701	2SA1115 2SA1048
ΔmQ4	03034401	2SB527
mQ5	03086101	2SD357
mQ6	07299701 or 46078801	2SC2603 2SC2458
ΔmQ7	46728901	2SC3298
mQ8	07299701	2SC2603
	or 46078801	2SC2458
mQ9	07299601	2SA1115
	or 46078701	2SA1048
ΔmQ10	46728801	2SA1306
•IC		
ΔmIC1	48355900	L7824
•Diode		
ΔmD1	46731500	CTP-21S
ΔmD2	46731400	CTP-21R
ΔmD3	03117000	RB152-LFF
ΔmD4	07193300	UB-152LFF
•Zener Diode		
mDZ2	46104200 or 46104300	05Z15-X 05Z15-Y
mDZ3	46104200 or 46104300	05Z15-X 05Z15-Y
mDZ4	46106600	05Z33-X
	or 46106700	05Z33-Y
mDZ5	46106600 or 46106700	05Z33-X 05Z33-Y
ΔmR1	00150600	6.8kΩ 2W N.I.R.
ΔmR2	00150600	6.8kΩ 2W N.I.R.
ΔmR3	00179000	10Ω 1W N.I.R.

to be continued ►

## &lt; F-5433 &gt;

Parts No.	Stock No.	Description
△mR4	46227400	4.7Ω 1/2W N.I.R.
△mR14	46249300	100Ω 1W N.I.R.
△mR15	46227800	10Ω 1/2W N.I.R.
△mR16	46227400	4.7Ω 1/2W N.I.R.
△mR21	46227400	4.7Ω 1/2W N.I.R.
mC5	48527800	0.01μF 630V F.C.
mC15	48527800	0.01μF 630V F.C.

## 3-8. F-5435 Speaker Switch Board

Parts No.	Stock No.	Description
•LED		
nLD2	48172100	BR3447S, PROTECTOR
nLD3	48172100	BR3447S, OVERSWING
nLD4	48572700	AA3427S, SPEAKER-B
nLD5	48572700	AA3427S, SPEAKER-A
oS3	48169400	Push SW., SPEAKER-A
oS4	48169400	Push SW., SPEAKER-B

## 3-9. F-5436 Display Switch Board

Parts No.	Stock No.	Description
oS1	48498600	Push SW., PEAK HOLD/DISPLAY

## 3-10. F-5438 Input Terminal Board

Parts No.	Stock No.	Description
oZ1	22006100	2P Terminal, INPUT

## 3-11. F-5437 Lamp Board

Parts No.	Stock No.	Description
nPL2	48583000	12V 75mA Pilot Lamp
nPL3	48583000	12V 75mA Pilot Lamp
nPL4	48583000	12V 75mA Pilot Lamp
nPL5	48583000	12V 75mA Pilot Lamp
nPL6	48583000	12V 75mA Pilot Lamp
nPL7	48583000	12V 75mA Pilot Lamp

## 3-12. F-5440 Indicator Board (Stock No. 00986801)

Parts No.	Stock No.	Description
•Transistor		
nQ1	46367101	2SC2603
	or 46367301	2SC2458
nQ2	46367001	2SA1115
	or 46367201	2SA1048
•IC		
nIC1	46078900	M5218L
nIC2	03610000	TA7318P
nIC3	46078900	M5218L
nIC4	48126200	MSL9356GS
•Diode		
nD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
•Zener Diode		
nDZ1	46112700	05Z8.2-Y
	or 46826300	RD8.2E-B3
•LED		
nLD1	03193700	SEL1110S, POWER
nC1	48103400	1μF 50V E.B.
nC2	48103400	1μF 50V E.B.
nC4	48103400	1μF 50V E.B.
nC6	46282900	0.01μF 50V F.C.
nC7	46282900	0.01μF 50V F.C.
nC8	48103600	3.3μF 50V E.B.
nC11	46283300	0.022μF 50V F.C.
nC13	46282900	0.01μF 50V F.C.
nC15	46284100	0.1μF 50V F.C.
nVR1	10343300	100kΩ (B) S.V.R., OdB Level
nVR2	10342300	2.2kΩ (B) S.V.R., Over Swing Level (L-CH)

## 3-13. F-5441 Indicator Board

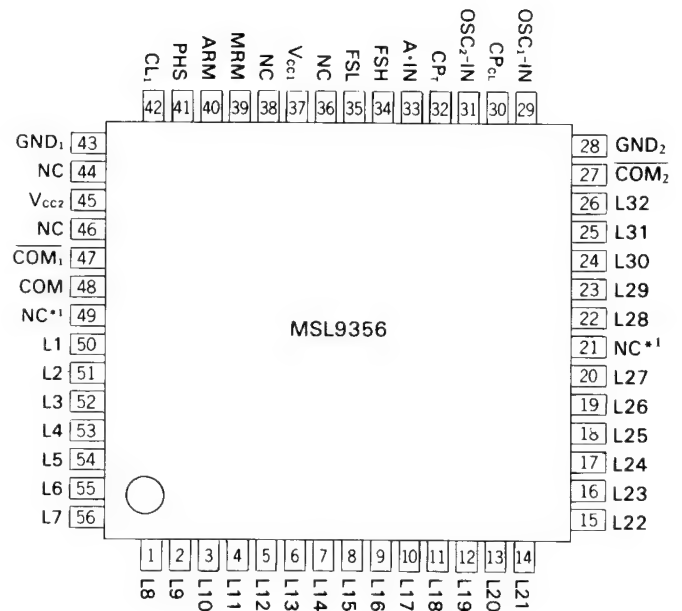
Parts No.	Stock No.	Description
•IC		
nIC5	48126200	MSL9356GS
nVR2	10342300	2.2kΩ (B) S.V.R., Over Swing Level (R-CH)

## 4. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

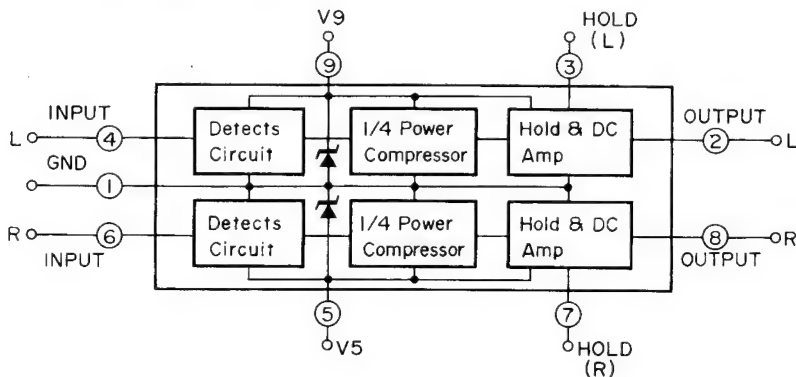
### •MSL9356

(Terminal Function of Meter Drive IC MSL9356)

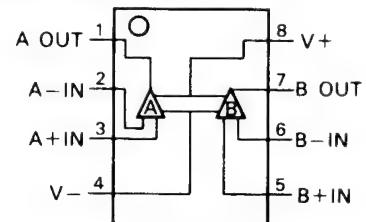
Symbol	Terminal Function
GND <sub>1</sub>	GND for All Circuit Except Clock OSC
GND <sub>2</sub>	GND for Clock OSC Circuit
L <sub>1</sub> ~ 32	Bar Segment Output Terminal
OSC <sub>1</sub> -IN	C•R Terminal for Clock OSC
CPCL	Clock Signal Input/Output Terminal
OSC <sub>2</sub> -IN	C•R Terminal for Peak Hold Reset Pulse OSC
CP1	Peak Hold Reset Pulse Input/Output Terminal
A•IN	Analog Signal Input Terminal
FSH	Reference Voltage Output Terminal for Full Scale Adjustment
FSL	Setting Voltage Input Terminal for Full Scale
MRM	Mode Signal Input Terminal for Peak Hold Manual Reset
ARM	Mode Signal Input Terminal for Peak Hold Automatic Reset
PHS	Select Signal Input Terminal for Peak Hold Function
CL <sub>1</sub>	C Terminal for Initial Clear
COM <sub>1</sub> •COM <sub>2</sub>	Phase Reversed Common Signal Output Terminal for Display Other Than Bar Segment
COM	Common Signal Output Terminal for Bar Segment



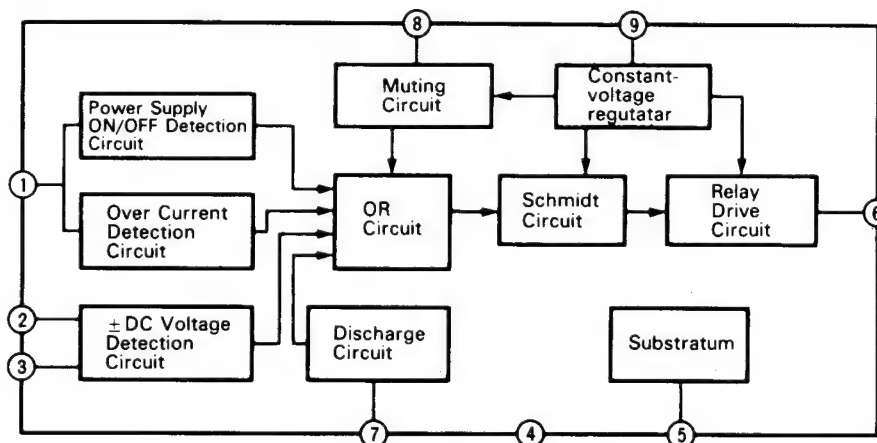
### •TA7318P (Meter Drive IC)



### •M5218 (Operation Amp)



### •TA7317P (Protector IC)



## 5. ADJUSTMENTS

- Notes:** 1. Room Temperature ..... 18°C ~ 28°C (65°F ~ 83°F)  
 2. For this adjustment, run the unit for more than 20 minutes after the power is switched ON.  
 3. Load ..... None

### 5-1. F-4618 Flat Amp. Board Adjustment (See Top View on page 12)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Center DC 0V Adj. <L-CH>	DC Voltage between Test Point & GND of F-4618 L-CH.	jVR1 (F-4618)	DC 0V ± 5 mV	•Attenuator Switch ..... MIN
2.	Center DC 0V Adj. <R-CH>	DC Voltage between Test Point & GND of F-4618 R-CH.	jVR1 (F-4618)	DC 0V ± 5 mV	

### 5-2. F-4618/F-4619 Driver & Power Amp. Board Adjustment (See Top View on page 12)

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Hot/Cold Balance Adj. <L-CH>	DC Voltage between Test Point OUT (HOT) and OUT (COLD) of F-4619 <L-CH>	kVR1 (F-4618) L-CH	DC 0V ± 5 mV	•Attenuator Switch ..... MIN •After adjustment step 4, repeat step 1, 2. <div style="text-align: right;"> <b>F-4619</b>  </div>
2.	Hot/Cold Balance Adj. <R-CH>	DC Voltage between Test Point OUT (HOT) and OUT (COLD) of F-4619 <R-CH>	kVR1 (F-4618) R-CH	DC 0V ± 5 mV	
3.	Center DC 0V Adj. <L-CH>	DC Voltage between Test Point OUT (HOT) and GND of F-4619 <L-CH>	kVR2 (F-4618) L-CH	DC 0V ± 5 mV	
4.	Center DC 0V Adj. <R-CH>	DC Voltage between Test Point OUT (HOT) and GND of F-4619 <R-CH>	kVR2 (F-4618) R-CH	DC 0V ± 5 mV	
5.	Bias Current Adj. <Hot Side Amp. of L-CH>	DC Voltage between Test Point OUT (HOT) and Emitter (HOT) of F-4619 <L-CH>	kVR3 (F-4619) L-CH	DC 6.6 mV (30 mA) ± 2 mV	
6.	Bias Current Adj. <Cold Side Amp. of L-CH>	DC Voltage between Test Point OUT (COLD) and Emitter (COLD) of F-4619 <L-CH>	kVR4 (F-4619) L-CH	DC 6.6 mV (30 mA) ± 2 mV	
7.	Bias Current Adj. <Hot Side Amp. of R-CH>	DC Voltage between Test Point OUT (HOT) and Emitter (HOT) of F-4619 <R-CH>	kVR3 (F-4619) R-CH	DC 6.6 mV (30 mA) ± 2 mV	
8.	Bias Current Adj. <Cold Side Amp. of R-CH>	DC Voltage between Test Point OUT (COLD) and Emitter (COLD) of F-4619 <R-CH>	kVR4 (F-4619) R-CH	DC 6.6 mV (30 mA) ± 2 mV	

### 5-3. Level Meter Display Adjustment (See Top View on page 12)

**Note:** Attenuator ..... MAX

SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
	FROM	TO				
0 dB Level Adjustment L-CH & R-CH	O.S.C. output 1 kHz so as to obtain 40V (200W) between Speaker Terminals HOT & COLD L-CH & R-CH	INPUT Terminal L-CH & R-CH	Peak Power Display L-CH & R-CH	nVR2 (F-5440) L-CH and nVR2 (F-5441) R-CH	Display Level 0 dB	•Remove the front panel for adjustment of nVR1 & nVR2

### 5-4. Over Swing Indicator Adjustment

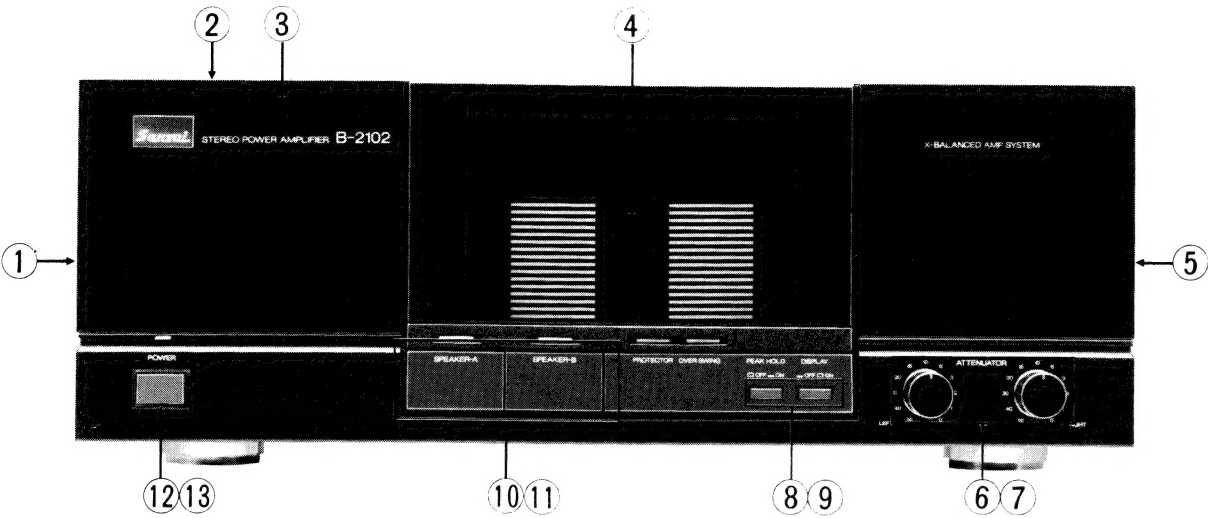
**Note:** Load ..... 8Ω

SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
	FROM	TO				
Over Swing Indicator Adj.	O.S.C. output 1 kHz so as to obtain 45V between Speaker Terminals HOT & COLD L-CH & R-CH	INPUT Terminal L-CH & R-CH	Over Swing Indicator (nLD3)	1.ATT Volume L-ch—Max R-ch—Min 2.ATT Volume L-ch—Min R-ch—Max	nVR1, L-ch (F-5440) nVR1, R-ch (F-5440)	Over Swing Indicator (nLD3) is flicked

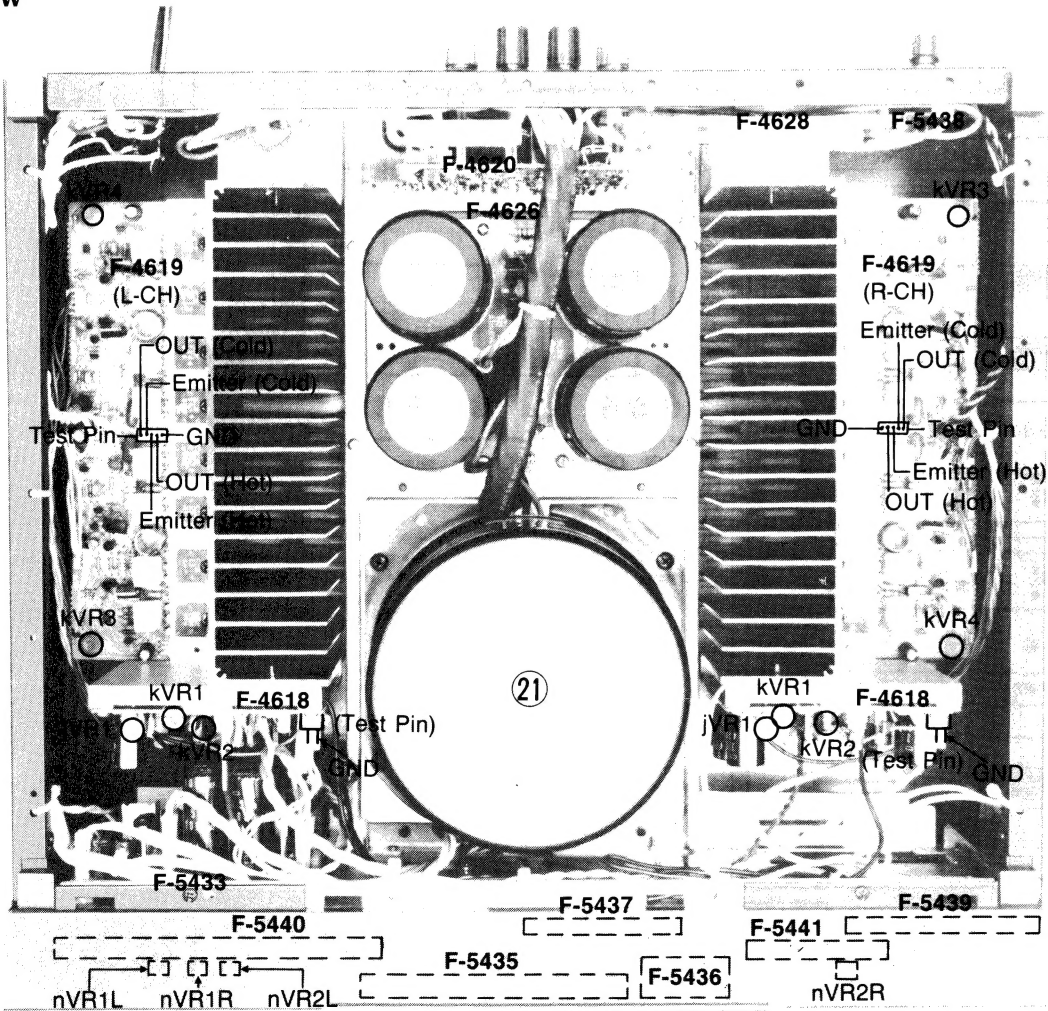


6. OTHER PARTS

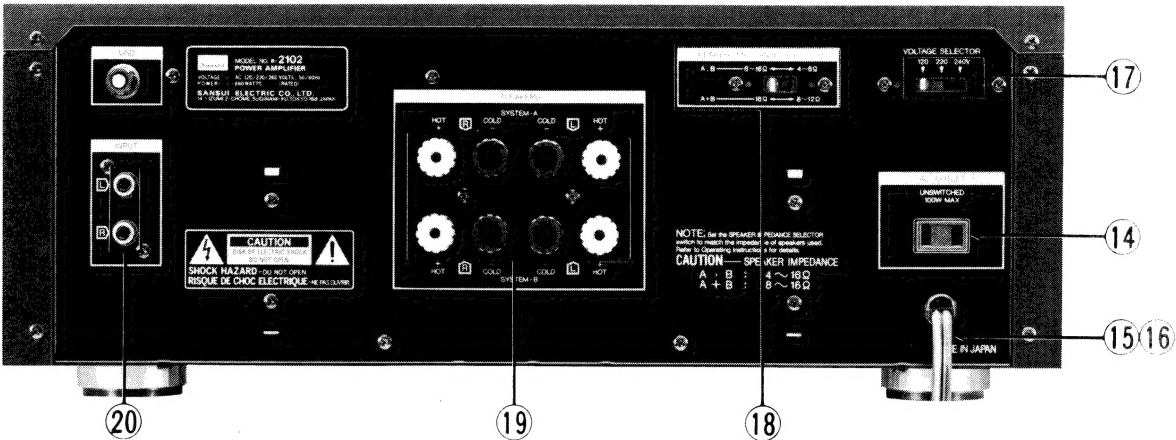
6-1. Front View



6-2. Top View



6-3. Rear View



Parts List <Front, Top & Rear View>

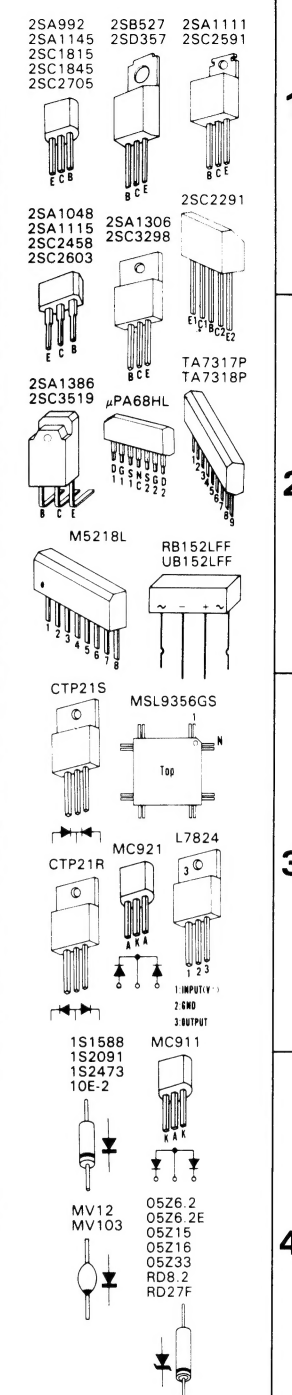
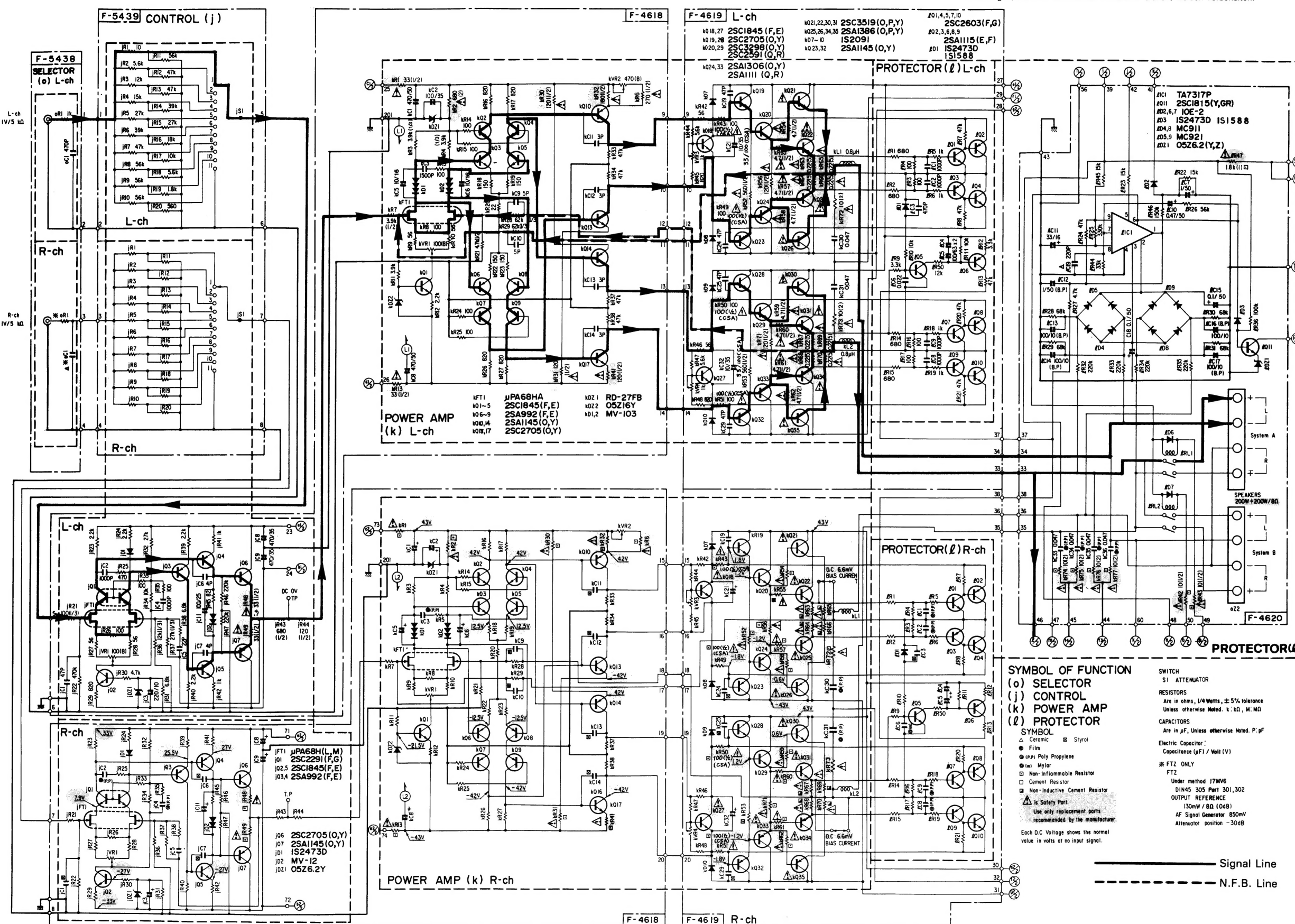
Parts No.	Stock No.	Description
1	27210200	Side Panel Ass'y (L)
2	27224200	Front Panel Ass'y
3	27210700	Bonnet <XX, UL, CSA>
	27210600	Bonnet <EU, UK>
4	48498400	Power Meter
5	27210300	Side Panel Ass'y (R)
6	27209600	Knob ATTENUATOR
7	48498500	Rotary SW., ATTENUATOR
8	27103200	Push Knob, PEAK HOLD, DISPLAY
9	48498600	Push SW., PEAK HOLD, DISPLAY
10	27220000	Knob Spring
11	48169400	Push SW., SPEAKERS A, B
12	47633700	Push Knob, POWER
△ 13	46612900	Push SW., POWER
△ 14	46364900	AC OUTLETS <XX-V>
△	46161000	AC OUTLETS <EU>
△	48184000	AC OUTLETS-Polarized <XX-V, UL, CSA>
△	46364800	AC OUTLETS <UK>

Parts No.	Stock No.	Description
△ 15	38004900	Power Supply Cord <XX-V>
△	46128900	Power Supply Cord <EU>
△	48188100	Power Supply Cord-Polarized <XX-V, UL, CSA>
△	38004300	Power Supply Cord <UK>
△	48306700	Power Supply Cord <SEV>
16	39104900	Strain Relief
△ 17	48062100	Slide SW., VOLTAGE SELECTOR <XX-V>
△	07204700	Slide SW., VOLTAGE SELECTOR <EU, UK, SEV>
18	46739400	Slide SW., SPEAKER INPEDANCE <XX-V, EU, UK, SEV>
	46736600	Slide SW., SPEAKER INPEDANCE <UL, CSA>
19	46739500	8P Speaker, Terminal
20	22006100	2P Terminal, OUTPUT
△ 21	15025901	Power Transformer <XX-V>
△	15025902	Power Transformer <UL, CSA>
△	15025905	Power Transformer <EU, UK, SEV>

## 7. SCHEMATIC DIAGRAM

### 7-1. Power Amp Section

- \* Design and specifications subject to change without notice for improvement.
- \* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOL OF FUNCTION  
(o) SELECTOR  
(j) CONTROL  
(k) POWER AMP  
(l) PROTECTOR

**SYMBOL**

△ Ceramic      ⊗ Styrol

● Film


⊙ (P.P.) Poly Propylene

⊙ (m) Mylar

☐ Non-Inflammable Resistor

☐ Cement Resistor

☐ Non-Inductive Cement Resistor

 is Safety Part.

Use only replacement parts recommended by the manufacturer.

Each D.C. Voltage shows the normal value in volts at no input signal.

Are in  $\mu F$ , Unless otherwise Noted. P.p.

Electric Capacitor:

Capacitance ( $\mu F$ ) / Volt (V)

※ FTZ ONLY

FTZ

Under method 17MW6

DIN45 305 Part 301,302

OUTPUT REFERENCE

130mV /  $\Omega$  (0dB)

AF Signal Generator 850mV

Attenuator position - 30dB

SWITCH  
S1 ATTENUATOR

RESISTORS  
Are in ohms, 1/4 Watts,  $\pm 5\%$  tolerance  
Unless otherwise Noted. K: k $\Omega$ , M: M $\Omega$

CAPACITORS  
Are in  $\mu$ F, Unless otherwise Noted. P: pF

Electric Capacitor :  
Capacitance ( $\mu$ F) / Volt (V)

※ FTZ ONLY  
FTZ  
Under method 17MV6  
DIN45 305 Part 301,302  
OUTPUT REFERENCE  
130mW / 8 $\Omega$  (10dB)  
AF Signal Generator 850mV  
Attenuator position -30dB

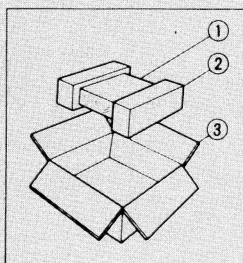
————— Signal Line  
- - - - - N.F.B. Line

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 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



## 8. PACKING LIST

Parts No.	Stock No.	Description
1	47858400	Vinly Bag
2	47332830	Styrofoam Packing
3	27209400	Carton Case



## 9. ACCESSORY LIST

Stock No.	Description
49013400	Operating Instruction (*E•F•S)
49013500	Operating Instruction (*G•I•Sw)

**\* Note:**

**E•F•S:** English•French and Spanish Version

**G•I•Sw:** German•Italian and Swedish Version



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